The following are proposed amendments to place application 10/575,247 into condition for allowance. If accepted, the amendments can be entered via Examiner's Amendment.

1-39. (cancelled)

40. (Amended) A cell culture substrate,~~n improved surface for the growth and attachment of cells~~ comprising a biodegradable biopolymer coated with hydrogen free diamond-like carbon, wherein cells can attach to and grow on the surface of the hydrogen free diamond-like carbon ~~and wherein the biopolymer is biodegradable~~.

41. (Cancelled)

42. (Amended) The cell culture substrate ~~improved surface~~ of claim 40, wherein the biopolymer is in a sheet form.

43. (Amended) The cell culture substrate ~~improved surface~~ of claim 40, wherein the biopolymer is in micro particle form.

44. (Amended) A method of growing neurons in culture comprising:

providing the cell culture substrate of claim 40;

[[the]]seeding neurons onto the hydrogen free diamond-like carbon; and

culturing ~~growth of~~ the neurons ~~on a biopolymer coated with a high quality, hydrogen free diamond-like carbon surface.~~

45. (Cancelled)

46. (Previously Presented) The method of claim 44, wherein the biopolymer is in sheet form.

47. (Previously Presented) The method of claim 44, wherein the biopolymer is in micro particle form.

48. (Amended) The cell culture substrate ~~improved surface~~ of claim 40, wherein the biopolymer has embedded or incorporated into it during its synthesis[[, an]] one or more attachment reagents ~~comprising one or more of the following~~ selected from the group consisting of: laminin, fibronectin, RGDS (SEQ ID NO: 1), basic fibroblast growth factor (bFGF) conjugated with polycarbophyll, epidermal growth factor (EGF) conjugated with polycarbophyll, and heparin sulfate.

49. (Amended) A method of growing neurons in culture comprising:

providing the cell culture substrate of claim 48;

[[the]] seeding neurons onto the hydrogen free diamond-like carbon; and

culturing ~~growth of~~ the neurons ~~on a biopolymer made using the method of claim 48~~.

50-58. (Cancelled)

59. (Amended) A three dimensional cell culture substrate ~~growth medium suitable for supporting the growth and replication of neural cells~~ comprising a semi-solid biopolymer ~~which is capable of supporting neuronal cell growth~~ coated with Diamond-Like Carbon, wherein the biopolymer is comprised of chitosan or sodium alginate, and wherein neural cells can attach to and grow on the surface of the Diamond-Like Carbon.

60. (Amended) The cell culture substrate ~~growth medium~~ of claim 59, wherein the biopolymer has embedded or incorporated into it during its synthesis[[, an]] one or more attachment reagents ~~comprising one or more of the following reagents~~ selected from the group consisting of: laminin, fibronectin, RGDS (SEQ ID NO: 1), basic fibroblast growth factor (bFGF) conjugated with polycarbophyll, epidermal growth factor (EGF) conjugated with polycarbophyll, heparin sulfate, and nerve growth factor (NGF), in an amount sufficient to allow neural or nerve cells transplanted onto the growth medium at low density to proliferate and send out neural processes.

61. (Amended) The cell culture substrate ~~growth medium~~ of claim 60, wherein said biopolymer is shaped into beads, sheets or micro-particles.

62. (Amended) A method of transplanting neurons to a recipient [[host]] comprising:

providing the three dimensional cell culture substrate of claim 60;

seeding [[of the]] neurons of interest onto the diamond-like carbon ~~into the growth medium of claim 60,~~;

allowing the neurons to grow to sufficient density[[,]]; and

~~implantation of~~ implanting the neurons on ~~within~~ the cell culture substrate~~growth medium~~ into said [[host]] recipient.

63-64. (Cancelled)

65. (Amended) A three dimensional cell culture substrate ~~growth medium suitable for supporting the growth and replication of neural cells~~ comprising a semi-solid biopolymer ~~which is capable of supporting neuronal cell growth which is~~ coated with bovine corneal epithelial cell-extracellular matrix (BCE-ECM) and the BCE-ECM is further coated with Diamond-Like Carbon, wherein neural cells can attach to and grow on the surface of the Diamond-Like Carbon.

66. (Amended) The cell culture substrate ~~growth medium~~ of claim 65, wherein the biopolymer is comprised of chitosan or sodium alginate.

67. (Amended) The cell culture substrate ~~growth medium~~ of claim 65, wherein the biopolymer has embedded or incorporated into it during its synthesis[[, an]] one or more attachment reagents ~~comprising one or more of the following reagents~~ selected from the group consisting of: laminin, fibronectin, RGDS (SEQ ID NO: 1), basic fibroblast growth factor (bFGF) conjugated with polycarbophyll, epidermal growth factor (EGF) conjugated with polycarbophyll, heparin sulfate, and nerve growth factor (NGF), in an amount sufficient to allow neural or nerve cells transplanted onto the ~~growth medium~~ substrate at low density to proliferate and send out neural processes.

68. (Amended) The cell culture substrate ~~growth medium~~ of claim 67, wherein said biopolymer is shaped into beads, sheets or micro-particles.

69. (Previously presented) A laboratory apparatus having a coating suitable for inducing the growth and attachment of cells, the apparatus having an inside and outside surface, wherein the inside surface is the surface in contact with cells and cellular media and the inside surface of said apparatus is coated with a film of Diamond-like-Carbon layered over a biopolymer coating.

70. (Amended) The apparatus of claim 69, wherein the apparatus is selected from the group consisting of cell culture dishes, petri dishes, tissue culture flasks, plates, bottles, slides, filter chambers, slide chambers, roller bottles, harvesters and tubing.

71. (Amended) A laboratory apparatus having a coating suitable for inducing the growth and attachment of cells, the apparatus having ~~comprising~~ an inside surface and an outside surface,

wherein the inside surface is the surface in contact with cells and cellular media and the inside surface of said apparatus is coated with a film of Diamond-like-Carbon, the Diamond-like-Carbon being layered over a biopolymer coating and at least one other coating.

72. (Previously Presented) The apparatus of claim 71, wherein the at least one other coating is an extracellular matrix.

73. (Previously Presented) The apparatus of claim 72, wherein the coating is BCE-ECM.

74. (Amended) A method of making a laboratory apparatus suitable for inducing the growth and attachment of cells, ~~wherein the laboratory apparatus has an inside surface and an outside surface, and wherein the inside surface is in contact with cells and cellular media of said apparatus,~~ the method comprising:

a) obtaining ~~the apparatus~~ a laboratory apparatus having an inside surface and an outside surface, wherein the inside surface is to be in contact with cells and cellular media;

b) applying to [[an]]the inside surface of the apparatus a biopolymer coating; then

c) applying a film of Diamond-like-Carbon over the biopolymer coating.

75. (Amended) The method of claim 74, further comprising ~~applying to the inside surface of said apparatus after step b)~~, between steps b) and c), step b') applying at least one other coating over the biopolymer coating~~, and then applying to the inside surface of said apparatus a film of Diamond-like-Carbon~~.

76-80. (Cancelled)